# KetaSpire® KT-880 CF40
## polyetheretherketone

KetaSpire® KT-880 CF40 is a 40% chopped carbon fiber-reinforced polyetheretherketone (PEEK.) The carbon fiber content in the formulation is designed to provide maximum strength and stiffness properties in a filled PEEK compound. The resin enjoys all the key performance attributes for which PEEK is known including resistance to harsh chemical environments, high heat resistance (both short and long term), along with excellent fatigue resistance.

This resin is a high flowing/low viscosity grade and is ideally suited for use in injection molding fabrication. It can be melt processed using standard thermoplastic melt processing equipment.

Potential application areas for KT-880 CF40 include uses in the aerospace industry and some other transportation applications where maximum mechanical properties are desired while maintaining a low specific gravity. Semiconductor fabrication is another industrial area of possible use for this resin as are the chemical processing, oil and gas, and health care industries.

### General

| | | |
|---|---|---|
| Material Status | • Commercial: Active | |
| Availability | • Africa & Middle East<br>• Asia Pacific<br>• Europe | • Latin America<br>• North America |
| Filler / Reinforcement | • Carbon Fiber, 40% Filler by Weight | |
| Features | • Autoclave Sterilizable<br>• Chemical Resistant<br>• E-beam Sterilizable<br>• Ethylene Oxide Sterilizable<br>• Fatigue Resistant<br>• Flame Retardant<br>• Good Dimensional Stability<br>• Good Sterilizability<br>• Heat Sterilizable | • High Flow<br>• High Heat Resistance<br>• High Stiffness<br>• High Strength<br>• Radiation (Gamma) Resistant<br>• Radiation Sterilizable<br>• Radiotranslucent<br>• Steam Resistant<br>• Steam Sterilizable |
| Uses | • Aircraft Applications<br>• Connectors<br>• Dental Applications<br>• Electrical/Electronic Applications<br>• Film<br>• Hospital Goods<br>• Industrial Applications | • Medical Devices<br>• Medical/Healthcare Applications<br>• Oil/Gas Applications<br>• Pump Parts<br>• Seals<br>• Surgical Instruments |
| RoHS Compliance | • Contact Manufacturer | |
| Appearance | • Black | |
| Forms | • Pellets | |
| Processing Method | • Injection Molding<br>• Machining | • Profile Extrusion |

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| Physical | Typical Value | Unit | Test method |
|---|---|---|---|
| Density / Specific Gravity | 1.46 | | ASTM D792 |

| Mechanical | Typical Value | Unit | Test method |
|---|---|---|---|
| Tensile Modulus | 33000 | MPa | ASTM D638 |
| Tensile Strength | 258 | MPa | ASTM D638 |
| Tensile Elongation [1] (Break) | 1.6 | % | ASTM D638 |
| Flexural Modulus | 30000 | MPa | ASTM D790 |
| Flexural Strength | 386 | MPa | ASTM D790 |
| Flexural Elongation (Break) | 1.8 | % | ASTM D790 |

| Impact | Typical Value | Unit | Test method |
|---|---|---|---|
| Notched Izod Impact | 80 | J/m | ASTM D256 |
| Unnotched Izod Impact | 750 | J/m | ASTM D4812 |

| Thermal | Typical Value | Unit | Test method |
|---|---|---|---|
| Deflection Temperature Under Load | | | ASTM D648 |
| 1.8 MPa, Annealed | 332 | °C | |

| Fill Analysis | Typical Value | Unit | Test method |
|---|---|---|---|
| Melt Viscosity (400°C, 1000 sec^-1) | 490 | Pa·s | ASTM D3835 |

| Injection | Typical Value | Unit |
|---|---|---|
| Drying Temperature | 150 | °C |
| Drying Time | 4.0 | hr |
| Rear Temperature | 365 | °C |
| Middle Temperature | 370 | °C |
| Front Temperature | 375 | °C |
| Nozzle Temperature | 380 | °C |
| Mold Temperature | 175 to 205 | °C |
| Injection Rate | Fast | |
| Screw Compression Ratio | 2.5:1.0 to 3.5:1.0 | |

## Notes

Typical properties: these are not to be construed as specifications.

[1] 5.0 mm/min

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